

(c) Vessels designed to carry sail, whether as the sole means of propulsion or as a supplementary means, and tugs, shall be assigned freeboards in accordance with the provisions of §§ 42.13-1 to 42.20-75, inclusive, and such additional freeboards as determined necessary by the Commandant under the procedure of paragraph (f) of this section.

(d) Vessels of wood or of composite construction, or of other materials the use of which the Commandant has approved, or vessels whose constructional features are such as to render the application of the provisions of §§ 42.13-1 to 42.25-20 unreasonable or impracticable, shall be assigned freeboards as determined necessary by the Commandant under the procedure of paragraph (f) of this section.

(e) The requirements in §§ 42.15-1 to 42.15-80, inclusive, shall apply to every vessel to which a minimum freeboard is assigned. Relaxations from these requirements may be granted to a vessel to which a greater than minimum freeboard is assigned provided the safety conditions of the vessel are determined to be satisfactory under paragraph (f) of this section.

(f) In each case specified by paragraphs (c) to (e) inclusive of this section, the assigning authority shall report to the Commandant the specific matters in which the vessel is deficient or requires special freeboard consideration due to design, arrangement, construction materials, propulsive method, or relaxation of requirements in this part. The report shall also furnish background data and recommendations of the assigning authority (including freeboard additions), as will enable the Commandant to reach a decision.

[CGFR 68-60, 33 FR 10058, July 12, 1968, as amended by CGFR 68-126, 34 FR 9013, June 5, 1969]

§ 42.13-15 Definitions of terms.

(a) *Length*. The length (L) shall be taken as 96 percent of the total length on a waterline at 85 percent of the least molded depth measured from the top of the keel, or as the length from the foreside of the stem to the axis of the rudder stock on that waterline, if that be greater. In vessels designed with a rake of keel the waterline on which

this length is measured shall be parallel to the designed waterline.

(b) *Perpendiculars*. The forward and after perpendiculars shall be taken at the forward and after ends of the length (L). The forward perpendicular shall coincide with the foreside of the stem on the waterline on which the length is measured.

(c) *Amidships*. Amidships is at the middle of the length (L).

(d) *Breadth*. Unless expressly provided otherwise, the breadth (B) is the maximum breadth of the vessel, measured amidships to the molded line of the frame in a vessel with a metal shell and to the outer surface of the hull in a vessel with a shell of any other material.

(e) *Molded depth*. (1) The molded depth is the vertical distance measured from the top of the keel to the top of the freeboard deck beam at side. In wood and composite vessels the distance is measured from the lower edge of the keel rabbet. Where the form at the lower part of the midship section is of a hollow character, or where thick garboards are fitted, the distance is measured from the point where the line of the flat of the bottom continued inwards cuts the side of the keel.

(2) In vessels having rounded gunwales, the molded depth shall be measured to the point of intersection of the molded lines of the deck and sides, the lines extending as though the gunwale were of angular design.

(3) Where the freeboard deck is stepped and the raised part of the deck extends over the point at which the molded depth is to be determined, the molded depth shall be measured to a line of reference extending from the lower part of the deck along a line parallel with the raised part.

(f) *Depth for freeboard (D)*. (1) The depth for freeboard (D) is the molded depth amidships, plus the thickness of the freeboard deck stringer plate, where fitted, plus

$$T(L - S)/L$$

if the exposed freeboard deck is sheathed;

where:

T is the mean thickness of the exposed sheathing clear of deck openings; and

S is the total length of superstructures as defined in paragraph (j)(4) of this section.

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(2) The depth for freeboard (D) in a vessel having a rounded gunwale with a radius greater than 4 percent of the breadth (B) or having topsides of unusual form is the depth for freeboard of a vessel having a midship section with vertical topsides and with the same round of beam and area of topside section equal to that provided by the actual midship section.

(g) *Block coefficient.* The block coefficient (C_b) is given by

$$C_b = \Delta / L \cdot B \cdot d_1$$

where Δ is the volume of the molded displacement of the vessel, excluding bossing, in a vessel with a metal shell, and is the volume of displacement to the outer surface of the hull in a vessel with a shell of any other material, both taken at a molded draft of d_1 ; and, d_1 is 85 percent of the least molded depth.

(h) *Freeboard.* The freeboard assigned is the distance measured vertically downward amidships from the upper edge of the deck line to the upper edge of the related load line.

(i) *Freeboard deck.* (1) The freeboard deck is normally the uppermost complete deck exposed to weather and sea, which has permanent means of closing all openings in the weather part thereof, and below which all openings in the sides of the vessel are fitted with permanent means of watertight closing. In a vessel having a discontinuance freeboard deck, the lowest line of the exposed deck and the continuation of that line parallel to the upper part of the deck is taken as the freeboard deck. At the option of the owner and subject to the approval of the assigning authority a lower deck may be designated as the freeboard deck, provided it is a complete and permanent deck continuous in a fore and aft direction at least between the machinery space and peak bulkheads and continuous athwartships. When this lower deck is stepped the lowest line of the deck and the continuation of that line parallel to the upper part of the deck is taken as the freeboard deck.

(2) When a lower deck is designated as the freeboard deck, that part of the hull which extends above the freeboard deck is treated as a superstructure so far as concerns the application of the conditions of assignment and the cal-

culatation of freeboard. It is from this deck that the freeboard is calculated.

(j) *Superstructure.* (1) A superstructure is a decked structure on the freeboard deck, extending from side to side of the vessel or with the side plating not being inboard of the shell plating more than 4 percent to the breadth. (B). A raised quarter deck is regarded as a superstructure.

(2) An enclosed superstructure is a superstructure with:

(i) Enclosing bulkheads of efficient construction;

(ii) Access openings, if any in these bulkheads fitted with doors complying with the requirements of § 42.15-10; and,

(iii) All other openings in sides or ends of the superstructure fitted with efficient weathertight means of closing.

NOTE: A bridge or poop shall not be regarded as enclosed unless access is provided for the crew to reach machinery and other working spaces inside the superstructures by alternative means, which are available at all times when bulkhead openings are closed.

(3) The height of a superstructure is the least vertical height measured at side from the top of the superstructure deck beams to the top of the freeboard deck beams.

(4) The length of a superstructure (S) is the mean length of the part of the superstructure which lies within the length (L).

(k) *Flush deck vessel.* A flush deck vessel is one which has no superstructure on the freeboard deck.

(l) *Weathertight.* Weathertight means that in any sea conditions water will not penetrate into the vessel.

[CGFR 68-60, 33 FR 10058, July 12, 1968, as amended by CGFR 68-126, 34 FR 9013, June 5, 1969; 43 FR 31928, July 24, 1978]

§ 42.13-20 Deck line.

(a) The deck line is a horizontal line 12 inches in length and 1 inch in breadth. It shall be marked amidships on each side of the vessel, and its upper edge shall normally pass through the point where the continuation outwards of the upper surface of the freeboard deck intersects the outer surface of the shell (as illustrated in Figure 42.13-20(a)), provided that the deck line may be placed with reference to another fixed point on the vessel on condition